

LYASHENKO, I.V.; KNYAZEVSKIY, V.F.

[Organization of the feed supply and wintering of cattle on collective farms] Organizatsiia kormovoi bazy i zimovki skota v kolkhoze
"Krasnaia Zaria." Frunze, Kirgizskoe gos. izd-vo, 1953. 25 p.
(Stock and stockbreeding) (MLRA 10:1)

LYASHENKO, I.V.

[Keeping livestock on pastures and ranges in Kirghizistan] Pastbishchnoe
i otgonno-pastbishchnoe soderzhanie skota v Kirgizii. Frunze, Kirgizskoe
gos. izd-vo, 1955. 49 p. (MLRA 10:1)
(Kirghizistan--Pastures and meadows)

VOROB'YEV, A.T., glav. red.; POLYAKOV, L.N., zam. glav. red.; BORISOV, Ye.G., red.; IVASYSHIN, S.N., red.; IMANALIYEV, Sh.I., red.; LYA-SHENKO, I.V., red.; OLEYNIK, A.K., red. Prinimali uchastiye: BEK-BOYEV, D.B., spets. red.; KIRKIN, M.F., spets. red.; TETEVIN, G.P., spets. red.; YUDAKHIN, N.P., red.; YEFIMOV, N.A., tekhn. red.

[Agriculture of Kirghizistan] Sel'skoe khoziaistvo Kirgizii; kratkii spravochnik. Frunze, Ob-vo po raspr. polit. i nauchn. znaniu Kirgizskoi SSR, 1961. 199 p.

(MIRA 14:10)

(Kirghizistan--Agriculture)

LYASHENKO, I. V.; RABINOVICH, M. Ye.

Basis for agricultural distribution and specialization in
Kirghizistan. Izv. Kir. fil. Geog. ob-va SSSR no.3:57-65 '62.
(MIRA 15:10)

(Kirghizistan—Stock and stockbreeding—Costs)
(Kirghizistan—Agricultural geography)

LYASHENKO, I.V.; SAVENKO, Yu.F.

Improve the quality of designs for reconstructing mines of the Donets.
Basin. Shakht. stroi. no.8:7-8 Ag '60. (MIRA 13:11)

1. Glavnyy inzhener kombinata Luganskugol' (for Lyashenko). 2. Glavnyy
inzhener tresta Kadiyevugol' (for Savenko).
(Mining engineering)

LYASHENKO, I.V.; PRIDOROGIN, V.D., inzh.; SAVENKO, Yu.F., inzh.

Rapid drifting at the "Krasnopol'e-Glubokoe" Mine. Ugol'. prom.
no.3:15-19 My-Je '62. (MIRA 18:3)

1. Kommunsrskiy gornometallurgicheskiy institut. 2. Glavnyy
inzh. kombinata "Luganskugol'" (for Lyashenko).

ALAMANOV B.A., kand. ekon. nauk, red.; LYASHENKO, I.V., kand. sel'khoz.nauk, red.; GLAZ'YEV, V., ~~red.~~; ~~ALAZEVSKI, B.~~, red.

[Problems in the economics of livestock farming in Kirghizistan] Voprosy ekonomiki zhivotnovodstva Kirgizii. Frunze, Kirgizgosizdat, 1963. 222 p. (MIRA 12:3)

1. Direktor Kirgizskogo nauchno-issledovatel'skogo instituta zhivotnovodstva i veterinarii (for Alamanov).

LYASHENKO, I.V., kand. tekhn. nauk; NIIVVA, E.E., inzh.

Improve the indices of tunneling in coal mines in operation.
Shakht. stroi. 9, no.9:1-5 S '65. (MIRA 18 9)

1. Chlen Gosudarstvennogo komiteta po toplivnoy promyshlennosti pri Gosplane SSSR (for Lyashenko). 2. Zaveduyushchiy laboratoriyey Tsentral'nogo nauchno-issledovatel'skogo instituta informatsii i tekhniko-ekonomicheskikh issledovaniy ugol'noy promyshlennosti.

LYASHENKO, K.D.

Let us restore the glory of the wheat country. Zemledelie 27
no.6:31-34 Je '65. (MIRA 18:9)

1. Glavnyy agronom sovkhkha imeni 25 Oktyabrya, Pervomayskogo
rayona, Nikolayevskoy oblasti, UkrSSR.

USSR/Soil Science - Soil Biology.

J

Abs Jour : Ref Zhur Biol., No 19, 1958, 86801

Author : Lyashenko, L.A.

Inst : Rostov University

Title : Effect of Various Kinds of Granulated Fertilizers on the
Virulence and Activity of Nodule-forming Bacteria of
Alfalfa

Orig Pub : Sb. stud. bot. Rostovsk. un-t, 1957, vyp. 3, 69-71

Abstract : No abstract.

Card 1/1

BRAUN, M.P.; LYASHENKO, L.A.

Studying the phase constitution of cast, complex-alloy austenitic steel. Fiz. met. i metalloved. 16 no.5:714-717 N '63.(MIRA 17:2)

1. Institut liteynogo proizvodstva AN UkrSSR.

L 17869-66 EWT(m)/EPF(n)-2/EWA(d)/EWP(t) IJP(e) JD/JG
ACC NR: AR5027743 SOURCE CODE: UR/0277/65/000/008/0012/0012

AUTHOR: Braun, M.P.; Lyashenko, L.A.

ORG: none

TITLE: Heat resistance and the phase compound of cast complex-alloy austenite steel

SOURCE: Ref. zh. Mashinostroytel'nyye materialy, konstruktsii i raschet detaley mashin. Gidroprivod, Abs. 8.48.69

REF SOURCE: Sb. Novoye v liteyn. proiz-ve. Kiyev, Tekhnika, 1964, 109-113

TOPIC TAGS: heat resistance, austenite steel, alloy steel, molybdenum, tungsten, niobium

TRANSLATION: A study was made of the effect on the heat resistance of Fe-Cr-Ni alloy (type 16-20) by the addition of W, Mo, Nb, and Ti. The heat resistance was evaluated by the centrifugal method and proved to be highest when alloyed with Mo, W, and Nb.

SUB CODE: 11

Card

UDC: 669.14.018

ACC NR: AT6036281

(N)

SOURCE CODE: UR/0000/66/000/000/0136/0143

AUTHOR: Lyashenko, L. A.; Braun, M. P.

ORG: Institute for casting problems AN UkrSSR (Institut problem lit'ya AN UkrSSR)

TITLE: Investigation of the effect of alloying on the structure and properties of cast austenitic steel

SOURCE: AN UkrSSR. Struktura metallicheskih splavov (Structure of metal alloys). Kiev, Izd-vo Naukova dumka, 1966, 136-143

TOPIC TAGS: iron base alloy, stainless steel, cast steel, austenitic steel, refractory metal

ABSTRACT: The authors investigated the effect of alloying and heat treatment on the refractory properties, strength, structure, and phase composition of cast refractory steels which are known to suffer from several defects (chemical nonuniformity, coarse grain, porosity, and blow holes). Steels with the base Cr 15 Ni20 were alloyed with about 2% Cb, 4% Mo, 4% W, and 0.1% Ti, quenched at 1150°C in water and annealed at 850°C for 10 hours. Specimens of these alloys were analysed metallographically and by x ray diffraction. Chemical separation of phases before and after annealing, and before and after the creep test, showed considerable changes in the amounts of alloying elements in solid solution. Alloying with tungsten and molybdenum increases

Card 1/2

ACC NR: AT6036281

creep strength. Addition of Mo and W also leads to the formation of an intermetallic compound of the AB_2 type. Orig. art. has: 4 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: 18May65/ ORIG REF: 002

2/2

BRAUN, Mikhail Petrovich; VINOKUR, Bertol'd Bentzionovich; CHERNYI,
Viktor Gavrilovich; CHERNOVOL, Arkadiy Vasil'yevich; KOSTYRKO,
Oleg Stepanovich; ALEKSANDROVA, Natal'ya Pavlovna; KRUKOVSKAYA,
Galina Nikolayevna; TIKHONOVSKAYA, Larisa Dmitriyevna; LYASHENKO,
Lyudmila Aleksandrovna; FIKSEN, N.V., kand. tekhn. nauk, otv.
red.; POKROVSKAYA, Z.S., red.; KADASHEVICH, O.A., tekhn. red.

[Alloys with addition elements] Legirovannyye splavy. [By] M.P.
Braun i dr. Kiev, Izd-vo AN Ukr.SSR, 1963. 142 p.

(MIRA 16:8)

(Alloys--Metallurgy)
(Foundries--Equipment and supplies)

BRAUN, Mikhail Petrovich; VINOKUR , Bertol'd Bentsionovich;
CHERNOVOL, Arkadiy Vasil'yevich; CHERNYI, Viktor
Gavrilovich; ALEKSANDROV, Anatoliy Grigor'yevich;
KOSTYRKO, Oleg Stepanovich; ALEKSANDROVA, Natal'ya
Pavlovna; LYASHENKO, Lyudmila Aleksandrovna;
MATYUSHENKO, Nelli Ivanovna; FIKSEN, N.V., kand. tekhn.
nauk, otv. red.; POKROVSKAYA, Z.S., red.; DAKHNO, Yu.B.,
tekhn. red.

[Structural and heat-resistant alloys] Konstruktsionnye
i zharoprochnye splavy. Kiev, Izd-vo AN USSR, 1963. 149 p.
(MIRA 17:3)

1. Akademiya nauk URSR, Kiev. Instytut lyvarnoho vyrob-
nytstva.

ACCESSION NR: AT4022204

S/0000/63/000/000/0052/0056

AUTHOR: Lyashenko, L. A.; Braun, M. P.

TITLE: Relative heat resistance of cast austenitic steel of complex composition

SOURCE: AN UkrRSR. Insty*tut ly*varnogo vy*robny*tstva. Konstruktsionny*ye i zharoprochny*ye splavy* (Structural and heat-resistant alloys). Kiev, Izd-vo AN UkrSSR, 1963, 52-56

TOPIC TAGS: alloy heat resistance, austenitic steel, complex austenitic steel, cast austenitic steel, cast steel, steel, heat resistance

ABSTRACT: There are many high temperature alloys currently being used in industry. However, they are all usually machined. Since cast structures have many advantages over forged ones, the centrifugal testing method proposed by Prof. I. I. Kornilov was used to investigate the relative heat resistance of austenitic cast steel of varying composition. Data were obtained on the relative heat resistance of iron-chromium steel with successive additions of tungsten, molybdenum, niobium, titanium and aluminum. As shown in the Enclosure, steel containing tungsten, molybdenum and niobium had the highest heat resistance. Orig. art. has: 3 figures and 2 tables.

Card 1/3

ACCESSION NR: AT4022204

ASSOCIATION: Insty*tut ly*varnogo vy*robny*tstva AN UkrSSR. (Institute of Foundry Technology, AN UkrSSR)

SUBMITTED: 00

DATE ACQ: 19Mar64

ENCL: 01

SUB CODE: ML

NO REF SOV: 005

OTHER: 000

Card 2/3

ACCESSION NR: AT4022204

ENCLOSURE: 01

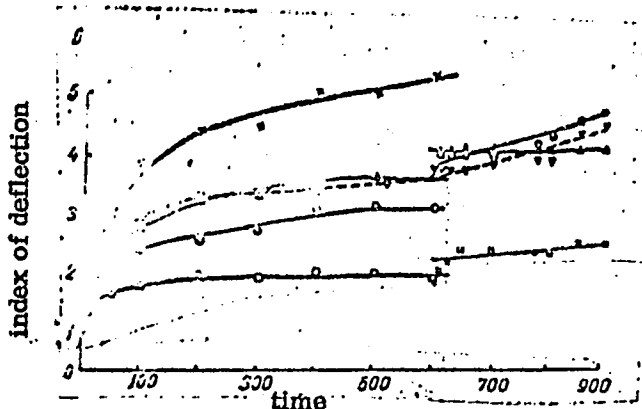


Fig. 1 - Relative heat resistance of Fe-Cr-Ni steel containing Si and C and alloyed successively with W, Mo, Nb, Ti and Al.

• Basic steel, $\sigma = 15 \text{ kg/mm}^2$; ○ Basic steel, $\sigma = 20 \text{ kg/mm}^2$; x W alloy, $\sigma = 15 \text{ kg/mm}^2$; Δ W + Mo alloy, $\sigma = 15 \text{ kg/mm}^2$; ▲ W + Mo alloy, $\sigma = 20 \text{ kg/mm}^2$; □ W + Mo + Nb alloy, $\sigma = 15 \text{ kg/mm}^2$; ■ W + Mo + Nb alloy, $\sigma = 20 \text{ kg/mm}^2$; ▽ Complete alloy, $\sigma = 15 \text{ kg/mm}^2$; ▼ Complete alloy, $\sigma = 20 \text{ kg/mm}^2$.

Card 3/3

BRAUN, Mikhail Petrovich; VINOKUR, Bertol'd Bentsionovich; CHERNOVOL,
Arkadiy Vasil'yevich; CHERNYI, Viktor Gavrilovich; ALEKSANDROV,
Anatoliy Grigor'yevich; EGSTYRKO, Oleg Stepanovich; ALEKSANDROVA,
Natal'ya Pavlovna; LYASHENKO, Lyudmila Aleksandrovna; MATYUSHENKO,
Nelli Ivanovna; FIKSEN, N.V., kand. tekhn. nauk, otv. red.;
POKROVSKAYA, Z.S., red.

[Structural and heat-resistant alloys] Konstruktsionnye i zharo-
prochnye splavy. Kiev, Izd-vo AN USSR, 1963. 149 p. (MIRA 17:3)

1. Akademiya nauk URSS, Kiev. Instytut liteynogo proizvodstva.

28443

S/185/61/006/002/019/020
D210/D304

26.2421

AUTHORS: Holynna, H.I., Lyashenko, L.V., and Sheynkman, M.K.

TITLE: On the spectral dependence of the field effect in
CdS and CdSe monocrystals

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 2, 1961,
281 - 284

TEXT: Monocrystals, prepared by synthesis from vapor, with a glassy surface, were used. There was no special treatment. The photosensitive area of the crystals was $0.1 \times 0.2 \text{ cm}^2$, their thickness $3 - 5 \times 10^{-3} \text{ cm}$. Liquid gallium was spread on them to obtain electrodes. The measurements were carried out at approximately $2 \times 10^{-6} \text{ mm Hg}$. Spectral characteristics of the photoelectric current J_{ϕ} , the output of the photoelectric current a and its relaxation time τ were investigated according to the method described by V. Ye. Lashkaryov, Ye.A. Sal'koy, H.A. Fedorus, and M.K. Sheynkman (Ref. 3: UFZh, 2, 262, 1957). When the external electric field was

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D210/D304

On the spectral dependence of ...

switched on so that a positive potential $+V$ was applied to the metallic electrode, the photoelectric current jumped to larger values, then diminished, at first rapidly (τ = some tenths of a second) later slowly (τ_2 = several tens of seconds) until it reached a certain stationary value J_{ϕ}^+ , larger than the current J_{ϕ}^0 in absence of a field. When $-V$ was applied the photoelectric current jumped to smaller values and then increased slowly, taking several seconds, until it reached some constant value $J_{\phi}^- < J_{\phi}^0$. The calculation of the number of current carriers introduced into the specimen of CdS showed that there were approximately 10^{12} cm^{-2} carriers when the field was applied which should lead to an increase of the photoelectric current by approximately 10^{-3} a . The experimental value of ΔJ_{ϕ}^+ was approximately 10^{-6} a , corresponding to $\sim 10^9 \text{ cm}^{-2}$ free carriers. A theoretical explanation is attempted (some alternative assumptions only). There are 2 figures and 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc.

Card 2/3

On the spectral dependence of ...

28443
S/185/61/006/002/019/020
D210/D304

ASSOCIATION: Instytut napivprovidnykiv AN URSR, m. Kyiv (Institute of Semiconductors, AS UkrSSR, Kiev) X

SUBMITTED: January 2, 1961

Card 3/3

LYASHENKO, L.V.; PIS'MENNY, Yu.G.; GOROKHOVATSKIY, Ya.B.; RUBANIK, M.Ya.

Relation between the catalytic and electronic properties of a semiconductor. Decomposition of nitrous oxide on thin copper oxide films. *Kin.i kat.* 5 no.6:1056-1062 N-D '64.

(MIRA 18:3)

1. Institut fizicheskoy khimii imeni Pisarzhevskogo AN UkrSSR.

L 27262-66 EWP(k)/EWT(d)/EWP(h)/EWP(l)/EWP(v)

ACC NR: AP6009523

SOURCE CODE: UR/0413/66/000/005/0048/0048

AUTHORS: Trofimov, N. M.; Arekhtyuk, Yu. A.; Lyashenko, L. V.

ORG: none

TITLE: Device for supplying pulse current to a welding arc. Class 21, No. 179401

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 48

TOPIC TAGS: welding equipment, welding equipment component, arc welding

ABSTRACT: This Author Certificate presents a device for supplying pulse current to a welding arc, containing a rectifier for supplying the basic arc, a rectifier for supplying the pilot arc, an oscillator, and a control circuit for stabilizing and modulating the welding current pulses. To simplify construction and to reduce weight and size, the control circuit is based on semiconductor triodes, while the oscillator is connected to the pilot arc circuit through a transformer with a ferrite core.

SUB CODE: 13/ SUBM DATE: 04Jun62

UDC: 621.791.037
621.373

Card 1/1 CC

LYASHENKO, M.L., mashinist teplovoza, chlen brigady kommunisticheskogo truda

Improve the working conditions on diesel locomotives during
operation. Elek.i tepl.tiaga 6 no.5:42 My '62. (MIRA 15:6)

1. Depo Yasinovataya Donetskoy dorogi.
(Diesel locomotives)

MALAYA, L.T., prof.; VIZIR, A.D.; LYASHENKO, M.M.

Ballistocardiographic changes in patients treated with erysimine.
Vrach.delo no.8:799-803 Ag '59. (MIRA 12:12)

1. Kafedra propedevtiki, fakul'tetskoy, gospiatal'noy terapii sanitarno-gigiyenicheskogo i gospiatal'noy terapii peidatricheskogo fakul'tetov (zav. kafedroy - prof. L.T. Malaya) Khar'kovskogo meditsinskogo instituta.

(CARDIOVASCULAR SYSTEM--DISEASES) (CARDIAC GLYCOSIDES)
(BALLISTOCARDIOGRAPHY)

FRISHMAN, M.P.; LYASHENKO, M.M.

Arterial piezography and the spreading rate of the pulse wave in
syphilitic aortitis. Vest. dermat. i ven. no.2:56-62 '85. (MIRA 18:10)

1. Ukrainskiy nauchno-issledovatel'skiy kozhno-venerologicheskii
institut (direktor - dotsent A.I.Pyatikop) Khar'kov.

MALAYA, L.T., prof.; LYASHENKO, M.M.

Rate of pulse wave spread and the functional state of the left
cardiac ventricle in pulmonary tuberculosis. Probl.tub. no.1:
20-27 '63. (MIRA 16:5)

1. Iz kafedry fakul'tetsko-gospital'noy terapii sanitarno-gi-
gienicheskogo i pediatricheskogo fakul'tetov (zav.-prof. L.T.
Malaya) Khar'kovskogo meditsinskogo instituta.
(TUBERCULOSIS) (PULSE) (HEART BEAT)

SAFRONOVA, V.I.; LYASHENKO, M.M.

Effect of digipuren on coronary circulation; according to
data of direct ballistocardiography. Vrach. delo no.1:29-33
Ja'64 (MIRA 17:3)

1. Kafedra gospi'tal'noy terapii (zav. - prof. L.T. Malaya)
leche'nogo fakul'teta Khar'kovskogo meditsinskogo instituta.

GRISHCHENKO, V.I. [Hryshchenko, V.I.], dotsent; LYASHENKO. M.M.

Some ballistocardiographic changes in hypertensive forms of
late pregnancy toxemias. Padiat. akush. ginek. no.3:49-52
'63 (MIRA 17:1)

1. Kafedra akusherstva i ginekologii pediatricheskogo fakul'teta (zav. - prof. V.F. Matveyeva [Matveieva, V.F.]) i kafedra gospi'tal'noy terapii vrachebnogo fakul'teta (zav. - prof. L.T. Malaya) Khar'kovskogo meditsinskogo instituta (rektor - dotsent B.A. Zadorozhnyy).

LYASHENKO, M.M., aspirant

Diagnosis of pulmonary arterial hypertension in cardiopulmonary
insufficiency according to ballistocardiographic data. Trudy Khar.
med. inst. no.50:5-13 '62. (MIRA 19:1)

1. Kafedra fakul'tetsko-gospital'noy terapii s obshchego i spetsial'nogo
cheskogo i pediatricheskogo fakul'tetov (zav. katedroy prof. L.T.
Malaya) Khar'kovskogo meditsinskogo instituta.

1ST AND 2ND CROSS										3RD AND 4TH CROSS									
COMMON ELEMENTS																			
COMMON VARIABLES INDEX																			
CA 2 Refractive indexes of tetrammineplatinum(II) chloride. M. M. Yakobin and M. N. Lyashenko. <i>Ann. sector Platine Inst. chim. gin. (U.S.S.R.)</i> 18, 111(1945)(in Russian).—<i>Repts. for Pt(NH₃)₄Cl₂</i> gave $n_D = 1.587$, $n_m = 1.615$. The much higher value for n_m (1.672) heretofore carried in all tables reverts to a misprint in Kurnakov's original articles of 1929 and 1930 (K. and Andreevskii, <i>C.A.</i> 34, 8961). N. Thon																			
ASB-32A METALLURGICAL LITERATURE CLASSIFICATION FROM SYMBOLS TO SYMBOLS 100000 100000																			

CA.

Crystallographic investigation of complex compounds of metals of the platinum group. V. G. B. Bokit and M. N. Lysachenko. *Trudy Inst. Krist.* 1947, No. 3, 21-8; cf. C.A. 43, 4535i. Optical and geometric data, useful for identification, are reported for the crystals of 12 examples. *cis*-Diamminodinitroplatinum, $[\text{Pt}(\text{NH}_3)_2(\text{NO}_2)_2]$, forms thin, pale-yellow needles $5 \times 0.1 \text{ mm.}$; monoclinic symmetry; $a:b:c = 0.82:1:1.030$; $\beta = 101^\circ 20'$; observed forms $\{001\}$, $\{101\}$, $\{110\}$. Twin formation is frequently observed in an immersed prep. $n_D = 1.700$, $n_g = 1.742$, $n_a = 1.711$; $2V = 80^\circ$; n_g/n_D = 42-5°. *cis*-Bis(phenylammonio)dichloroplatinum, $[\text{Pt}(\text{C}_6\text{H}_5\text{NH}_2)_2\text{Cl}_2]$, forms greenish yellow needles $10 \times 0.6 \text{ mm.}$ showing tetragonal symmetry; $a:c = 1:2.352$; observed forms $\{001\}$, $\{101\}$, $\{110\}$. Uniaxial, pos.; $n_D > 1.785$, $n_g = 1.722$. *cis*-Bis(phenylammonio)dibromoplatinum, $[\text{Pt}(\text{NH}_2\text{C}_6\text{H}_5)_2\text{Br}_2]$, forms tetragonal crystals which show only the forms $\{001\}$ and $\{100\}$. Uniaxial, pos.; $n_D > 1.780$, $n_g = 1.770$. *Tris(bromocarbonyl)platinum pyridine monohydrate*, $\text{C}_5\text{H}_5\text{NH}[\text{Pt}(\text{COBr})_3]\text{H}_2\text{O}$, forms orange needles $2 \times 0.2 \text{ mm.}$; tetragonal; holohedral; $a:c = 1:0.914$. Uniaxial, neg. $n_D > 1.785$, $n_a = 1.581$. The crystals appear to be isomorphous with Pt trichlorocarbonylpyridinium monohydrate. *cis*-Styrenediamminodichloroplatinum, $[\text{Pt}(\text{C}_6\text{H}_5\text{NH}_2)_2\text{Cl}_2]$. Because of the oblique extinction, the poorly formed needles were assumed to be triclinic. $n_D > n_g > 1.700$; $n_a = 1.608$, $2V = -45^\circ$.

trans-Pyridineamminodinitroplatinum, $[\text{Pt}(\text{C}_5\text{H}_5\text{NH})_2(\text{NO}_2)_2]$, long, fine, white crystals which show direct extinction. $n_D = 1.750$, $n_g = 1.696$, $n_a = 1.624$; $2V = -78^\circ$. *Bis(phenylammonio)(methylammonio)(nitrochloronitro)platinum chloride*, $[\text{Pt}(\text{C}_6\text{H}_5\text{NH}_2)(\text{CH}_3\text{NH}_2)(\text{NO}_2\text{ClNO}_2)]\text{Cl}$. The fine, yellow platelets show no definite edges. $n_D = 1.750$, $n_g = 1.740$, $n_a = 1.670$; $2V = -40^\circ$ measured on the Fedorov stage. *cis*-Pyridinebis(phenyl)dichloroplatinum, $[\text{Pt}(\text{C}_5\text{H}_5\text{NH})_2\text{Cl}_2]$, $n_D = 1.80$, $n_g = 1.750$, $n_a = 1.700$; $2V = -78^\circ$. *cis*-Pyridineethylenedichloroplatinum, $[\text{Pt}(\text{C}_5\text{H}_5\text{NH})_2\text{Cl}_2]$, forms greenish yellow, thin needles. $n_D = 1.97$, $n_g = 1.704$, $n_a = 1.682$; $2V = 28^\circ$. The orthorhombic system is indicated because of the direct extinction. *trans*-Pyridineethylenedichloroplatinum, $[\text{Pt}(\text{C}_5\text{H}_5\text{NH})_2\text{Cl}_2]$, forms fine, light-yellow needles with orthorhombic symmetry. *cis*-Diamminodichloroplatinum, $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$. Twin crystals are frequently found among the orthorhombic platelets, the twinning plane being at an angle of 20° to the extinction. $n_D > 1.82$, $n_g = 1.700$, $n_a = 1.601$. *trans*-Diamminodichloroplatinum, $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$, forms a yellow powder in which fine rhombohedra or needles can be distinguished under the microscope. In the rhombohedra the extinction is symmetrical; in the needles it is oblique. They belong to the monoclinic system. $n_D > 1.700$, $n_g = 1.778$, $n_a = 1.700$; the angle between n_a and the needle axis = 19° . n_a lies in the long diagonal of the rhombus. *trans*-Di-

amminonitrochloroplatinum, $[\text{Pt}(\text{NH}_3)_2(\text{NO}_2)\text{Cl}]$, gives crystals of irregular form. $n_y = 1.700$, $n_g = 1.780$, $n_a = 1.764$; $2V$ (calcd. from the principal refractions) = 46° . *cis*-Carbonylamminodichloroplatinum, $[\text{Pt}(\text{CONH}_2)_2\text{Cl}_2]$, large, green-lantern needles with bright interference colors, $n_y = 1.700$, $n_g = 1.748$, $n_a = 1.722$; $2V$ (calcd. from the principal refractions) = 74° . VI. G. B. Bokil and E. R. Burovaya. *Ibid.* 20-38. — *Ethyldiammonium chloroaurate*, $[\text{NH}_4\text{C}_2\text{H}_5]_2[\text{AuCl}_4]$, forms nearly black flakes which appear deep red by transmitted light. Measurements on 12 individual crystals showed hexagonal symmetry. $a:c = 1:1.201$. Class D_{3h} . Observed forms: $\{1001\}$, $\{10\bar{1}0\}$, $\{11\bar{2}0\}$, $\{20\bar{2}1\}$, $\{10\bar{1}1\}$, $\{01\bar{1}1\}$. Coalescence along $20\bar{2}1$. Optically uniaxial, neg. These crystals belong to the group $[\text{NH}_4\text{C}_2\text{H}_5]_2\text{MX}_4$, where M is Sn, Se, Os, Pt and X is Cl or Br. *Ammonium chloroaurate monohydrate*, $(\text{NH}_4)_3[\text{AuCl}_4]\cdot\text{H}_2\text{O}$, dark-green prisms with orthorhombic symmetry; class D_{2h} . $a:b:c = 0.888:1:0.406$. Observed forms $\{110\}$, $\{1\bar{1}0\}$, $\{011\}$. $n_y = 1.718$, $n_g = 1.714$, $n_a = 1.706$. The long direction of the crystal is pos. $2V = -66^\circ$. *Potassium diamminodibromonitrochloroplatinate hemihydrate*, $\text{K}[\text{Rh}(\text{NH}_3)_2(\text{NO}_2)\text{Cl}] \cdot \frac{1}{2}\text{H}_2\text{O}$, light yellow plates 2 mm in diameter of triclinic symmetry. $a:b:c = 1.205:1:0.903$. $\alpha = 95^\circ 18'$, $\beta = 118^\circ 30'$, $\gamma = 85^\circ 11'$. Observed forms $\{100\}$, $\{010\}$, $\{001\}$, $\{210\}$, $\{012\}$, $\{110\}$, $\{1\bar{1}0\}$, $\{012\}$. $n_y = 1.710$, $n_g = 1.690$, $n_a = 1.612$; $2V = -62^\circ$. *Methyldiammonium chlororhodate*, $(\text{MeNH}_2)_2[\text{RhCl}_4]\text{MeNH}_2\text{Cl}$ (I), forms nearly black, rod-like crystals 2-3 mm long, which appear rose-colored when thin. They are orthorhombic; class D_{2h} . $a:b:c = 0.703:1:0.570$. $n_y = 1.692$, $n_g = 1.690$, $n_a = 1.672$; $2V = 79^\circ$. *Methyldiammonium chloroaurate*, $(\text{MeNH}_2)_2[\text{AuCl}_4]\text{MeNH}_2\text{Cl}$, extraordinarily thin flakes, dirty-green in color, isomorphous with I. $a:b:c = 0.70:1:0.56$. Observed forms $\{100\}$, $\{010\}$, $\{001\}$, $\{110\}$, $\{1\bar{1}0\}$. $n_y = 1.704$ (lies perpendicular to the plane of the prepn. and is, therefore, calcd. from other data), $n_g = 1.650$, $n_a = 1.638$; $2V = 63^\circ$. *trans*-Diamminonitrobromoplatinum, $[\text{Pt}(\text{NH}_3)_2(\text{NO}_2)\text{Br}]$, bright-yellow powder composed of fine rhombohedra. Symmetrical extinction. $n_y > n_g > 1.780$, $n_a = 1.778$. *trans*-Diamminonitroplatinum, $[\text{Pt}(\text{NH}_3)_2(\text{NO}_2)_2]$, is a colorless powder made up of crystals of various forms. Twinning was observed. $n_y = 1.80$, $n_g = 1.770$, $n_a = 1.531$; $2V = -32^\circ$. *Rhodiumdiammine trinitrite*, $[\text{Rh}(\text{NH}_3)_2(\text{NO}_2)_3]$, a light-yellow powder of microcrystalline rhombohedra. Sym. extinc.

CA

2

Crystalloptical constants of $\text{CaCl}_2 \cdot 4\text{H}_2\text{O}$. A. I. Shepelev, M. N. Lyashenko, and I. G. Druzhinin. *Doklady Akad. Nauk S.S.S.R.* 73, 379-81(1959).—The stability ranges of the CaCl_2 hydrates are the following: $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$ from -66 to $+30.1^\circ$; $\text{CaCl}_2 \cdot 4\text{H}_2\text{O}$ from 14 to 48° ; $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$ from 39 to 176° ; $\text{CaCl}_2 \cdot \text{H}_2\text{O}$ from 176 to 238° . The tetrahydrate is observed in 3 modifications (cf. Bassett, *et al.*, *C.A.* 27, 3388; 31, 7321¹): (α) triclinic, neg., $n = 1.532$; $\beta = 1.560$; $\gamma = 1.571$; $2V = 63^\circ$; (β) uniaxial, or pseudo-uniaxial, neg., in needles with $n = 1.500$; $\gamma = 1.530$; (γ) in thin elongated plates, from supersatd. solns. at 25° , neg., with $2V = 68^\circ$, $n = 1.447$; $\beta = 1.477$; $\gamma = 1.401$. The modification (γ) is, in the dry state, easily changed to (β) and the stable (α). The crystn. of (α) is observed between 14 and 48.3° , (β) between 15.9 and 41° , (γ) between 19.7 and 39° ; micrographs are given. W. R.

LYASHENKO, M. N.

"Crystallographic Investigation of Complex Compounds of Bivalent Platinum." Sub 2 Jul 51, Inst of Crystallography, Acad Sci USSR.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

LYASHENKO, M. N.

✓ Crystals of complex compounds of metals of the platinum group. XI. M. N. Lyashenko. *Trudy Inst. Krist., Akad. Nauk SSSR*, 1974, 49, 29306. — *cf. C.A. 49, 29306.* — *cis*-[Pt(NH₃)₂Cl₂], very thin pseudohexagonal tables, light-yellow, monoclinic, with {010}{001}{110}, twinned parallel {001}; $a:b:c = 0.0081:1:7$; $\beta = 96^\circ 57'$; n above 1.780; $2V = +50^\circ$ (universal stage method). [Pt(NH₃)₂Cl₂·H₂O], thin yellow tables, triclinic-pinacoidal with {100}{010}{111}{111}{011}{111}{001}; $a:b:c = 1.1178:1:0.8244$; $\alpha = 93^\circ 13'$; $\beta = 95^\circ 52'$; $\gamma = 97^\circ 13'$; $n_\gamma 1.360$, $n_\beta 1.760$, $n_\alpha 1.690$; $2V = +83^\circ$ (universal stage method); d , 2.88. [Pt(NH₃)₂Cl](NO₃)₂·H₂O, colorless, monoclinic-prismatic, with {110}{210}{011}{111}{100}{001}; $a:b:c = 0.7461:1:0.4606$; $\beta = 92^\circ 38'$. Extinction angle of the prisms 30° ; $n_\alpha 1.628$; $n_\beta 1.640$; $n_\gamma 1.692$; $2V = +50^\circ$ (calcd.). [Ir(NH₃)₂Cl]Cl₂, colorless, isometric grains, orthorhombic; $a:b:c = 0.9872:1:1.5527$; $n_\alpha 1.001$, $n_\beta 1.678$, $n_\gamma 1.722$; $2V = +65^\circ$. [Co(NH₃)₂Cl]Cl₂, raspberry-red; linear extinction, pleochroic, with pale-red and red colors; $n_\alpha 1.680$, $n_\beta 1.692$, $n_\gamma 1.702$; $2V = +74^\circ$ (universal stage method); $a:b:c = 0.8825:1:1.5347$; [Co(NH₃)₂Cl]Cl₂ and [Rh(NH₃)₂Cl]Cl₂ are isomorphous. [Rh(NH₃)₂Cl]Cl₂, colorless, low birefringence, n about 1.679. [Co(NH₃)₂Cl]Cl₂, red-brown, n 1.69–1.70; $a:b:c = 0.9880:1:0.6601$; $\beta = 91^\circ$. K₂[Rh(NO₂)₂Cl₂], colorless, isotropic, $n = 1.886$. K₂[Co(NO₂)₂Cl₂] yellow, isotropic, n about 1.74. [Rh(NH₃)₂Cl₂], yellow anisotropic crystals with symmetric extinction; biaxial; $n_\alpha 1.766$, n_β and n_γ above 1.782. [Rh(NO₂)₂(NH₃)₂Cl], colorless, monoclinic, $n_\alpha 1.722$, $n_\beta 1.732$, $n_\gamma 1.736$. W. Bille.

LYASHENKO, M. N.

USSR/Solid State Physics - Structural Crystallography, E-3

Abat Journal: Referat Zhur - Fizika, No 12, 1956, 34646

Author: Lyashenko, M. N.

Institution: None

Title: Crystals of Complex Compounds of the Metals of the Platinum Group

Original Periodical: Tr. In-ta kristallogr. AN SSSR, 1954, No 9, 335-348

Abstract: See Referat Zhur - Khim, 1956, 24909

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- 1 -

USSR/Chemistry - Inorganic

FD-1608

Card 1/1 : Pub. 129-11/23

Author : Bokiy, G. B.; Lyashenko, M. N.; Batsanov, S. S.

Title : A new method for determining the structure of complex compounds

Periodical : Vest. Mosk. un., Ser fizikomat. i yest. nauk, 9, No 8, 75-78,
Dec 1954

Abstract : Determined the geometric configuration of the cis and trans isomers of $\text{Pt}(\text{NH}_3)_2\text{Cl}_2$ and the trans isomer of $\text{Pt}(\text{NH}_3)_2(\text{NO}_2)_2$ by comparing the molecular refraction as calculated by the Lorentz and Lorenz formula with the experimentally determined values. The refractive indices used were values obtained by extrapolating to infinite wavelength. Three tables. Seven references (six USSR).

Institution : Chair of Crystallography and Crystal Chemistry, Geology Faculty

Submitted : March 31, 1954

LYASHENKO, M. N.

The reaction of nepheline with phosphoric acid. V. N. Sveshnikova and M. N. Lyashenko (N. S. Kurnakov Inst. Gen. and Inorg. Chem., U.S.S.R., Moscow). *Zhet. Nauch. Khim.* 1, 632-3 (1973). The reaction between naturally occurring nepheline ($\text{Na}_2(\text{AlSi}_3\text{O}_8)$) and H_3PO_4 was studied by means of the potentiometric titration of a suspension of nepheline with H_3PO_4 with const. stirring. The initial addn. of H_3PO_4 causes a sharp decrease in the pH of the suspension pointing to the probable destruction of the aluminosilicate and the formation of slightly sol. basic Al phosphates. The thermogravimetric analysis of the ppts. showed that different products are formed depending on the pH of the medium. For a pH of 5.39 the following reaction is probable: $2\text{Na}_2\text{AlSi}_3\text{O}_8 + 7\text{H}_3\text{PO}_4 + 6\text{H}_2\text{O} \rightarrow \text{Al}(\text{OH})_3 + (\text{PO}_3)_2 \cdot 5\text{H}_2\text{O} + 3\text{Na}_2\text{HPO}_4 + 6\text{H}_4\text{SiO}_4$. I. Rostov-Letch.

LYASHENKO, M.N.

Crystals of complex compounds of platinum group metals. (Article 13).
Kristallografiia 1 no.3:361-365 '56. (MLBA 9:12)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova.
(Platinum group)

URAZOV, G.G.; KIRAKOSYAN, A.K.; LYASHENKO, M.N.

Solubility of cadmium nitrate in ammoniacal solutions. Izv.Sekt.fiz.-khim.
anal.27:315-327 '56. (MIRA 9:9)

1.Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova AN SSSR.
(Cadmium nitrate)

20-2-22/60

AUTHORS: Bashilova, N. I. , Lyashenko, M. N.

TITLE: A Crystallographic Study of the Sulphates of the Monovalent Thallium (Kristallograficheskoye issledovaniye sul'fatov odnovalentnogo talliya)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp.314-315 (USSR)

ABSTRACT: As result of the interaction of thallous sulphate with aqueous solutions of sulphuric acid, three acid thallous sulphates are produced: $Tl_3H(SO_4)_2$, $TlHSO_4$ and $Tl_2H_4(SO_4)_3$. The initial compound Tl_2SO_4 has already been dealt with in earlier investigations from the crystallographic and from the radiographic-structural point of view. On the other hand, the acid thallous sulphates, of which two were previously known, were only qualitatively characterized from the crystallographic-optical point of view, and for one of them there existed goniometric results. $Tl_3H(SO_4)_2$ crystallizes in the form of thin plates that belong to the trigonal syngony. The indices of refraction,

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20-2-22/60

A Crystallographic Study of the Sulphates of the Monovalent Thallium

as determined by means of immersion, are listed in chart Nr 1 of the paper under review. TlHSO_4 crystallizes in the form of quadratic lamellae and in form of needles. If let stand, neither thallous sulphate changes its form in saturated solution. But if the solution is stirred for a long time with plate-shaped crystals of thallous bisulphate, then needle-shaped crystals are formed. In this context, the lamellae disappear by being completely transformed into needles. The question had to be clarified whether thallous bisulphate was dimorphous, or whether, on the contrary, the needle-shaped crystals of TlHSO_4 belonged to the same modification, so that the outward difference was caused by a nonuniform development of the crystalline facets. For this purpose the crystals of thallous bisulphate were investigated from a crystallographic-optical and goniometrical point of view. The results of this investigation are compiled in chart Nr 2 of the paper under review. They show that under normal circumstances thallous bisulphate crystallizes in two modifications, namely in a needle-shaped, α -modification and in a lamella-shaped β -modification. $\text{Tl}_2\text{H}_4(\text{SO}_4)_3$ crystallizes from very concentrated and viscous solutions in which normal crystallization

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20-2-22/60

A Crystallographic Study of the Sulphates of the Monovalent Thallium

is rendered difficult. Therefore the form of these crystals is very incomplete; they are isotropic. There are 1 figure, 2 tables, and 9 references, 1 of which is Soviet.

ASSOCIATION: Institute for General and Inorganic Chemistry imeni N. S. Kurnakov, AS USSR (Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR)

PRESENTED: December 6, 1956, by G. G. Urazov, Academician

SUBMITTED: November 18, 1956

AVAILABLE: Library of Congress

Card 3/3

LYASHENKO, N. S.

LYASHENKO, N. S. "On the Empire of the Uterus." *Dissertations For Degrees In
Science and Engineering Submitted at 60th Higher Educational
Institutions (22) L'vov Medical Inst, L'vov, 1945

CC: Knizhnaya Letopis' No 29, 16 July 1945

* For the Degree of Candidate in Medical Sciences

LYUBARSKIY, M.G. [Liubars'kyi, M.H.]; LYASHENKO, M.S.

Physiological method of preparing the breasts for lacta-
tion. Pediat. akush. ginek. no.3:57 '63 (MIRA 17:1)

1. Kafedra akusherstva i ginekologii No.2 (zav. - prof. F.O.
Peterburgskiy [Peterburz'kyi, F.O.] Kiyevskogo instituta us-
vershenstvovaniya vrachey (rektor - dotsent M.N.Umovist) i
rodil'nyy dom 2, Kiyev (glavnyy vrach A.N.Zozulya).

LYASHENKO, M. YE

112-2-3585

Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957,
Nr 2, p. 155 (USSR)

AUTHOR: Frantsevich, I.N., Pilipenko, N.A., Lyashenko, M.Ye.

TITLE: The Effect of the Cathode Polarization of Electrically
Protected Steel Gas Mains on Asphalt Insulating Coating
(O vliyani katochnoy polarizatsii stal'nykh gazoprovodov
v usloviyakh elektrozashchity na sostoyaniye izo-
lyatsionnogo bitumnogo pokrytiya)

PERIODICAL: In Sbornik: Vopr. poroshkovoy metallurgii i prochnosti
materialov. Nr 3, Kiev, AN UK.SSR, 1956, pp.122-136

ABSTRACT: The dependence of the asphalt pipe coating
on the thickness of the coating, the existence of
initial erosion and the magnitude of the potential
on the electrodes was studied on spherical electrodes
under constant and high humidity conditions. Most of the
experiments lasted more than a year and a half. It was
found, that the ductility of the coating dropped from
3 to 0, the penetration from 18 to 2.5 to 2, and the
softening temperature rose from 80 to 90° to 112 to 124°.
In the vicinity of the coating the pH acidity of the soil
dropped from 8.5 to 7.4 which, supposedly, can be ex-

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The Effect of the Cathode Polarization of Electrically (Cont.)

plained by the interaction of the coating with the acid soil or by the saponification of esters present in the asphalt. At low electrode potential (in the order of 2 v) the undamaged insulating coating completely peels off after several weeks. The two initial insulation faults, measuring 4 to 16mm² in area sharply speed up the peeling process of the coating. At an electrode potential of 1 v, the effect of polarization on the condition of the coating is very slight indeed. When the thickness of the insulation is increased, the peeling process slows down. Decreased circuit resistance and higher current is the sign of peeling. When the peeling is complete, the current drops. Hydrogen depolarization is the principal cause of flaking. Tests have confirmed the hypothesis, that it is

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112-2-3585
The Effect of the Cathode Polarization of Electrically (Cont.)

necessary to increase the potential on the pipe lines and to compensate for the contracted zone of protection by setting up intermediate cathode stations or projectors as the properties of the coating deteriorate. Data gathered from inspection of the Dashava-Kiev gas main are given. In 1949 no evidence of aging or deterioration was uncovered. Of 100 places inspected in 1952, 38 proved to have defective insulation (17 due to plant roots). Low temperature caused the rest of the damage. In 1954, of 24 places inspected in the course of maintenance work only 17 per cent showed no insulation-coating deterioration. Cases of natural coating-aging were discovered. There was no noticeable change in the physical and mechanical properties of the basic mass of the coating.

D.S.K.

Card 3/3

LYASHENKO, N.A., redaktor; TYAPKIN, B.G., redaktor; MEL'NICHENKO, F.P.,
tekhnicheskiiy redaktor.

[Experience of outstanding building projects in overall mechaniza-
tion of earthwork] Opyt peredovykh stroek po kompleksnoi mekhanizatsii zemlianykh rabot. Moskva, Gos. izd-vo lit-ry po stroit. i arkhitekture, 1956. 20 p. (Ratsionalizatorskie i izobretatel'skie predlozhenia v stroitel'stve, no.128) (MLRA 9:8)
(Earthwork)

LYASHENKO, N.A. inzhener, nauchnyy sotrudnik; TYAPKIN, B.G., redaktor
izdatel'stva; MEL'NICHENKO, F.P. tekhnicheskly redaktor.

[Experience of advanced builders in preparing foundations and
foundation pits] Opyt peredovykh stroek po ustroystvu osnovanii i
kotlovanov dlia fundamentov. Moskva, Gos. izd-vo lit-ry po stroit.
i arkhit., 1956. 34 p. (Ratsionalizatorskie i izobretatel'skie
predlozheniia v stroitel'stve, no.127). (MLRA 10:8)
(Foundations)

LYASHENKO, N.A., inzh.; PAVLOVA, D.A.

Construction of the Northern Donets-Donets Basin Canal.

Opyt Stroi. no.8:86-95 '57.

(MIRA 11:1)

(Donets Basin--Canals)

LYASHENKO, N.A., inzhener.

Work practices at the reinforced concrete plant in Minsk. Biul. stroi.
tekh. 14 no.5:13-15 My '57. (MLRA 10:6)

1. Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'stva Aka-
demii stroitel'stva i arkhitektury SSSR.
(Minsk--Concrete plants)

USENKO, V.M., kand.tekhn.nauk; LYASHENKO, N.A., inzh.; PAVLOVA, D.A.

State and standard of work mechanization in constructing apartment
houses and public buildings. Opyt stroi. 15:3-42 '58.
(Building machinery) (MIRA 11:11)

LYASHENKO, N.A., inzh.

Means of modernizing the electric power plants and air blast stations of metallurgical plants with the aim of increasing their technical level. Trudy NTO chern. met. 20:76-78 '60. (MIRA 13:10)

1. Krivorozhskiy metallurgicheskiy zavod.
(Metallurgical plants)

LYASHENKO, N. F.

A manual on lumbering Kiev, Gos. izd-vo tekhn. lit-ry Ukrainy, 1948. 462 p.
(50-29905)

TS820.L5

1. Lumbering.

LYASHENKO, Nestor Filippovich

U/E
729.412
.23.

Spravochnik Po Lesozagotovkam (Handbook for Timber Cutting) Kiyev,
1 zd-vo Akademii Arkhitektury Ukarinskoy SSR, 1955.

783 P. Illus., Diagr., Tables.

Bibliography: P. 773-775

LYASHENKO, N. I.

I. A. Deriugin, N. I. LYASHENKO: "Ferrite modulator and polarization analyzer for an 8mm radio telescope." Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep. 58

A ferrite modulator for a millimeter radio telescope is developed and accomplished experimentally.

The modulator is a ferrite apparatus. The ferrite swings the polarization plane of the radio emission being received periodically with an 85 cps frequency. The high modulating frequency (170 cps) permits the spectral density of the slow fluctuations at the second detector output to be reduced to a minimum.

The emission polarization analyzer is a rotating waveguide section in which two stubs located at a $3/8 \lambda_g$ distance are inserted or extracted. Using this section and taking into account the additional rotation of the polarization plane, an analysis can be made of the emission by using a ferrite. The control is remote.

The system loss is 0.5 db and the standing wave coefficient is 1.15.

S/181/63/005/004/024/047
B102/B186

AUTHORS: Deryugin, I. A., and Lyashenko, N. I.

TITLE: Noise of magnetized ferrite

PERIODICAL: Fizika tverdogo tela, v. 5, no. 4, 1963, 1117 - 1125

TEXT: The noise of a ferrite placed in a standard rectangular waveguide was measured in dependence on temperature and applied constant magnetic field, using of a Dike radiometer (Rev. Sci. Instr., 17, 268, 1946) in the 10^{10} cps band. The ferrite noise in the presence of a magnetic field was found to have two components: the one is the common thermal noise, the other is caused by spontaneous spin transitions between the energy levels of the spatial spin quantization in the magnetic field. The magnetic noise depends on the field in resonance-like manner, i.e. the curve has a maximum in the region of ferromagnetic resonance at a frequency corresponding to half the pass band of the radiometer. At temperatures below the Curie point the magnetic noise level depends exponentially on the ferrite temperature. Near the Curie temperature the radiometer records only part of the magnetic noise owing to anomalous resonance curve broadening. During the transition

Card 1/2

Noise of magnetized ferrite

S/181/63/005/004/024/047
B102/B186

of the ferrite from ferromagnetic to paramagnetic state the energy of the magnetic dipole transitions is spread over a great number of degrees of freedom; due to this fact the resonance character of the field dependence of the noise is distorted. For ferrites with ferromagnetic resonance widths below the pass band of the shf system the magnetic noise becomes raised for samples with higher magnetic moments, provided that the magnetic moment has increased due to an increased amount of spins. Temperature drop leads to reduced population of the upper energy levels and to reduction of the noise when the magnetic moment increases. Therefore the magnetic noise of a ferrite will be lower when operating in the short-wave side of the microwave band. Considering a ferrite amplifier, ferrites with narrow ferromagnetic resonance curve and large magnetic moments will have lower noise levels. Since the ferromagnetic resonance width is inversely proportional to the magnetic moment the noise of a ferrite in pumping regime will be lower when the magnetic moments are large. The radiometer method has proved to be very sensitive and well applicable. There are 6 figures.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko
(Kiyev State University imeni T. G. Shevchenko)

SUBMITTED: July 16, 1962 (initially)
Card 2/2 November 14, 1962 (after revision)

L 16336-65 EWT(1)/EED-2 ESD(gb)/ESD(t)/ESD(dp)/ESD/AFKL/ASD(a)-5/AS(zp)-2

ACCESSION NR: AP5000684

S/0181/64/006/012/3723/3725

AUTHORS: Deryugin, I. A.; Kuts, P. S.; Lyashenko, N. I.

TITLE: Comparison of radiation and absorption properties of ferrites ^B

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3723-3725

TOPIC TAGS: ferrite, absorption spectrum, radiation spectrum, microwave spectrum, spectroscopic splitting factor, fluctuation dissipation theorem

ABSTRACT: The absorption and radiation properties of ferrites were measured at 9100 Mc using the equipment shown in Fig. 1 of the enclosure. The purpose of the experiments was to establish the relation between the radiation and absorption properties of the ferrites, and to determine the noise levels of ferrite devices by absorption measurements, which are much simpler than radiation mea-

Card 1/4

L 16336-65

ACCESSION NR: AP5000684

surements. The intrinsic electromagnetic radiation of the polycrystalline ferrite samples was registered with the aid of a superheterodyne modulation radiometer with sensitivity 1°K (time constant of output instrument $\tau = 1$ sec) and a transmission bandwidth $\Delta f = 115$ Mcs. The samples were spheres with diameter $d = 3.6$ mm placed in a waveguide section with the aid of a special holder. The tests have demonstrated that the width and line shape of the radiation and emission lines are the same for each sample, and that the spectroscopic splitting factor remains the same in both cases. The results also indicate that, within the limit of experimental accuracy, the radiation abilities of all the samples are proportional to their absorption abilities, thus providing also an experimental verification of the fluctuation-dissipation theorem, first formulated by H. B. Callen et al. (Phys. Rev. v. 83, 84, 1951 and v. 86, 702, 1952). Orig. art. has: 2 figures and 1 formula.

Card 2/4

L 16336-65

ACCESSION NR: AP5000684

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T. G.
Shevchenko (Kiev State University)

SUBMITTED: 24Feb64

ENCL: 01

SUB CODE: EC, SS

NR REF SOV: 004

OTHER: 006

Card 3/4

L 16336-65

ACCESSION NR: AP5000684

ENCLOSURE: 01

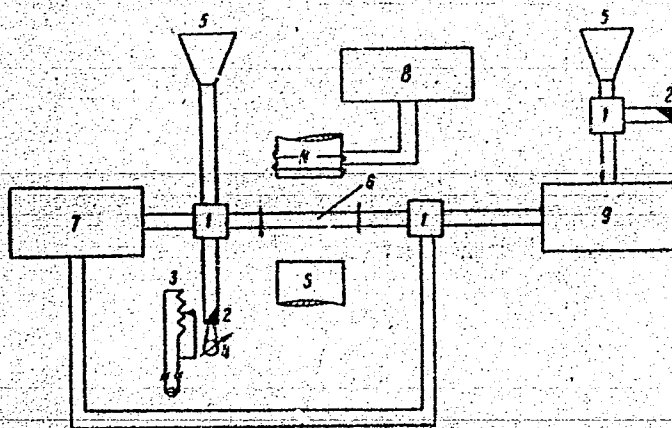


Fig. 1. Block diagram of experimental setup for the measurement of the absorption and radiation of ferrites.

- 1 - Waveguide switches, 2- equivalent of absolutely black body,
- 3 - heater, 4 - thermocouple, 5 - horn antennas, 6 - ferrite sample,
- 7 - radio spectrometer, 8 - magnetic-field control block, 9 - radiometer

Card 4/4

ACCESSION NR: AP4040919

S/0109/64/009/006/1081/1082

AUTHOR: Deryugin, I. A. , Lyashenko, N. I.

TITLE: Noise in ferrites at various frequencies in the SHF band

SOURCE: Radiotekhnika i elektronika, v. 9, no. 6, 1964, 1081-1082

TOPIC TAGS: ferrite, noise in ferrite, ferrite noise at SHF

ABSTRACT: Polycrystalline yttrium ferrite-garnets ($3Y_2O_3 \cdot 5Fe_2O_3$) were investigated at 3,000, 9,100, and 35,300 mc. The ferrite noise was recorded by means of a modulation-type radiometer. Curves of the noise-power-per-unit volume vs. frequency are presented; they were determined from maxima of radiation lines. Not only the noise increases with the frequency but the radiation line becomes wider, also. Orig. art. has: 2 figures and 3 formulas.

ASSOCIATION: none

SUBMITTED: 11Nov63

ENCL: 00

SUB CODE: EC

NO REF SOV: 003

OTHER: 002

Card 1/1

Lyashenko N.S.

LYASHENKO, N.S., kand. sel'skokhozyaystvennykh nauk.

In the Technical Council of the Ministry of Agriculture of the
R.S.F.S.R. Zhivotnovodstvo 20 no.1:90-92 Ja '58. (MIRA 11:1)
(Beef cattle)

LYASHENKO, N.S., kand. sel'skokhozyaystvennykh nauk.

In the technical Council of the Ministry of Agriculture of the
R.S.F.S.R. conference on Jersey cattle. Zhivotnovodstvo 20 no.6:
90-94 Je '58. (MIRA 11:6)

(Jersey cattle)

18376

LYASHENKO, N. S.

USSR/Chemistry - Aluminum-Zinc Alloys May/Jun 51

"Heats of Formation and Phase Transformations of Alloys of the Al-Zn System," V. S. Lyashenko, Inst Gen and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR

Iz Ak Nauk SSSR, Otdel Khim Nauk, No 3, pp 242-253

Describes new method for measuring heat capacity and heats of phase transformations in reducing or inert atm with rate of heating of 20/min. Measured heat capacities above liquidus temp and heats of phase transformations for 14 Al-Zn alloys. Detd crit points on basis of exptl data and constructed

18376

LC

USSR/Chemistry - Aluminum-Zinc Alloys May/Jun 51
(Contd)

phase diagram. Drew curves of heat content change and thermodynamic potential, from which it follows that alloys with 43-49 atom % zinc have stronger bond between atoms of Zn and Al than alloys of other compns. Derives eq for calcn of free energy change in formation of alloy from elements.

LC

18376

LYASHENKO, N.S., inzhener.

Excavators, ditch diggers and scrapers used abroad. Biul.
stroil. tekhn. 13 no.6:35-40 Je '56. (MLRA 9:9)

1. Tsentral'nyy institut informatsii po stroitel'stvu.
(Excavating machinery)

S/069/60/022/006/007/008
B013/B066

AUTHORS: Neyman, R. E. and Lyashenko, O. A.

TITLE: Kinetics of Turbidity Change of Dilute Synthetic Latices
During Their Coagulation by Means of Electrolytes

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol. 22, No. 6, pp. 757-759

TEXT: In the present letter to the editor the authors report on the investigation of the agglomeration process of globulae carried out by means of light scattering and of the slow coagulation of dilute synthetic latices on addition of electrolytes. Various electrolytes (CaCl_2 or NaCl) (Table) were added to a divinyl styrene latex of the type CKC-30-AP (SKS-30-AR) (emulsifier: Nekal), which was 10^4 times diluted and not dialyzed; the change of turbidity with time was observed up to complete coagulation of the latex. A HQM(NFM) nephelometer was used for the measurements. The concentration gradient of the refractive index of the dispersions was determined on a refractometer of the MPT-23 (IRT-23) type. The kinetic curves of the turbidity change were determined for one

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Card 1/3

Kinetics of Turbidity Change of Dilute
Synthetic Latices During Their Coagulation by
Means of Electrolytes

S/069/60/022/006/007/008
B013/B066

of the latex samples (dry content 14%, pH 10, surface tension 43 dyne/cm, saturation of the surface of the globulae with the emulsifier 70%, average radius of the globulae, according to the turbidity data, $r=19 \text{ m}\mu$). The parallel experiments were well reproducible. The introduction of the electrolyte was found to cause the agglomeration of the globulae. The increase in turbidity which indicates this agglomeration, becomes slower after a certain time. The increasing saturation of the globula surface with the emulsifier, which takes place during the agglomeration, results in the formation of an adsorption - solvate layer. This concludes the first stage of the process. The further, slower course of the coagulation is probably due to the necessity of overcoming the potential barrier resulting from the protective action of the solvate layer. The primary agglomeration is accelerated by an increase in the electrolyte concentration. The dimensions of the resultant aggregates increase in this connection. This is due to the fact that the degree of the electrolyte action on the state of the adsorption-solvate sheath depends on its concentration. An increase in concentration presumably contributes to a drop of the potential barrier. The observed reduction of turbidity is due to the

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Kinetics of Turbidity Change of Dilute
Synthetic Latices During Their Coagulation by
Means of Electrolytes

S/069/60/022/006/007/008
B013/B066

ascending of the coagulated dispersion to the surface. Similar results
were also obtained for a number of other samples of this latex. There are
1 figure and 1 table.

ASSOCIATION: Voronezhskiy universitet Khimicheskii fakultet (Voronezh
University, Chemical Division)

SUBMITTED: July 8, 1960

✓

Card 3/3

S/069/61/023/006/004/005
B119/B101

AUTHORS: Neyman, R. E., Lyashenko, O. A., Kirdeyeva, A. P.,
Yegorov, A. K., Kiseleva, O. G.

TITLE: Investigation of stability and coagulation of synthetic latexes. 1. Effect of adsorptive saturation of the globule surface by the emulsifier

PERIODICAL: Kolloidnyy zhurnal, v. 23, no. 6, 1961, 732 - 738

TEXT: The coagulation kinetics of dilute synthetic latexes as dependent on the adsorptive saturation of the globule surface by the emulsifier (Nekal) was investigated. Experiments were conducted with divinyl styrene latex of the type CKC-30-AP (SKS-30-AR). The production of latex specimens differently saturated with emulsifier was carried out: (1) Dialysis of the latex for 50 days, the adsorptive saturation with emulsifier having been reduced down to 19%. The dialyzate was divided and mixed with various amounts of Nekal. (2) The latex was also dialyzed. Specimens were taken during dialyzing (maximum saturation of the globule surface ~75%, minimum ~11%). The degree of surface saturation was

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S/069/61/023/006/004/005
B119/B101

Investigation of stability...

determined by adsorption titration with aqueous Nekal solution (indication: change of the surface tension). Coagulation was brought about by means of CaCl_2 and NaCl , respectively. The course of coagulation was observed on the basis of turbidity (measuring instrument: HQM (NFM) nephelometer). The value of the concentration gradient of the refractive index of dispersion, was determined by means of IRF-23 (IRF-23) refractometer. The macroelectrophoresis of latex specimens was conducted with an instrument according to A. I. Rabinovich and Ye. V. Podiman (Zh. fiz. khimii 2, 336, 1931). The ζ -potential was calculated on the basis of data obtained from the electrophoresis. Results: The coagulation of latex not completely saturated takes place in two steps. The duration of the first step (characterized by a relatively quick turbidity of the solution) was 80 - 85 min for the least saturated latex specimens, and increased with increasing adsorptive saturation. Explanation: The quick coagulation of the globules occurs in places not covered by emulsifier. The size of the aggregates developed after this first coagulation step decreases, therefore, with increasing surface saturation of the initial globules. The second step takes place much more slowly than the first. This is due to the necessary overcoming of an additional

Card 2/4

S/069/61/023/006/004/005
B119/B101

Investigation of stability...

potential barrier. The first phase could not be established for completely saturated latex; coagulation takes place from the start according to the second phase. The mean radius of the initial globules was 20 - 22 μ . The radius of the aggregates formed after the first coagulation step was 43 - 58 μ . The surface tension of the latex decreases with increasing saturation and is constant of further Nekal additions after the total saturation. The ζ -potential changes only slightly within the degrees of saturation investigated: 55 mv for latex saturated up to 25 - 30%; 65 mv for completely saturated latex. A dependence of the electrophoretic migration rate of the globules on their adsorptive degree of saturation was not established. Studies by B. V. Deryagin (Tr. Tret'ey vses. konferentsii po kolloidnoy khimii, Izd. AN SSSR 1956, str. 225), P. A. Rebinder (Sb. "Kolloidy v pishchevoy prom-sti", 2, 1949, str. 21), and S. A. Glikman and Ye. P. Korchagina (Ref. 5: Kolloidn. zh. 19, 657, 1957) are mentioned. There are 6 figures, 1 table, and 13 references: 9 Soviet and 4 non-Soviet. The two most recent references to English-language publications read as follows: J. T. G. Overbeek, Advances in Coll. Science, N. J., 3, 97, 1950, S. H. Maron, W. W. Bowler, J. Amer. Chem. Soc., 70, 3893, 1948. ✓

Card 3/4

Investigation of stability...

S/069/61/023/006/004/005
B119/B101

ASSOCIATION: Voronezhskiy universitet, Khimicheskiy fakul'tet,
Laboratoriya vysokomolekulyarnykh soyedineniy (Voronezh
University, Division of Chemistry Laboratory of High-
molecular Compounds) ✓

SUBMITTED: August 27, 1960

Card 4/4

39801
S/069/62/024/004/003/003
B101/B138

114800
AUTHORS:

Neyman, R. E., Lyashenko, O. A.

TITLE:

Investigation of the stability and coagulation of synthetic latexes. 2. Dependence of the rate of first stage of latex coagulation on concentration and valence of the coagulating ions.

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 4, 1962, 494 - 496

TEXT: Previous papers (Kolloidn. zh., 22, 757, 1960; *ibid.*, 23, 732, 1961) showed that the coagulation of divinyl styrene latexes by electrolytes proceeds in two stages. The slow first stage was here studied nephelometrically in CKC-3OAP (SKS-3OAR) divinyl styrene latex with Nekal as emulsifier. The latex (dry residue 7.5%) was diluted $5 \cdot 10^3$ - 10^4 times (pH = 6) and coagulated with NaCl, CaCl_2 , or NdCl_3 . Results: (1) The coagulation time t (300-500 min) of the slow stage decreases with increasing electrolyte concentration. When rapid coagulation sets in, t (3-7 min) becomes independent of electrolyte concentration. (2) The values found for transition from slow to rapid coagulation were:
Card 1/2

Investigation of the stability ...

S/069/62/024/004/003/003
B101/B138

A	B		
	NaCl	CaCl ₂	NdCl ₃
1.35	160	2	0.05
3.90	240	4	0.20
6.00	480	7	0.25
7.60	560	8	0.30

where A is the content of emulsifier in the latex (in % of rubber); and B is the electrolyte concentration (mole/l).

If the CaCl₂ concentration is 1, 60 - 80 times more NaCl, but only 0.03 - 0.05 NdCl₃ is required to reach the transition point to rapid coagulation. X

This is in good agreement with the Schultz-Hardy rule. Hence, the existence of a relation between the first stage of slow coagulation and the electrostatic factor of the aggregate stability of latexes is confirmed. There are 2 figures and 1 table.

ASSOCIATION: Voronezhskiy universitet, Khimicheskii fakul'tet, Laboratoriya vysokomolekulyarnykh soyedineniy (Voronezh University, Division of Chemistry, Laboratory of High-molecular Compounds)

SUBMITTED: August 2, 1961
Card 2/2

NEYMAN, R.E.; LYASHENKO, O.A.

Stability and coagulation of synthetic latexes. Part 6: Effect of secondary ions of electrolyte-coagulants on the kinetics of the first stage of coagulation. Koll. zhur. 27 no.2:254-258 (MIRA 18:6)
Mr-Apr '65.

1. Voronezhskiy universitet, Nauchno-issledovatel'skiy fiziko-khimicheskiy institut.

L 12959-65 EWT(m)/EPF(c)/ENP(j)/T PC-4/Pr-4 RM

ACCESSION NR: AP4042253

8/0064/64/000/007/0496/0499

AUTHOR: Antonovskiy, V. L.; Lyashenko, O. K.; Nenashev, Yu. M.; Kesterov, A. F.; Filippova, G. F.

TITLE: Synthesis of 1-oxy-1'-hydroperoxydicyclohexyl peroxide

SOURCE: Khimicheskaya promyshlennost', no. 7, 1964, 496-499

13

TOPIC TAGS: cyclohexanone peroxide, cyclohexanone peroxide dissociation, polymerization initiator, Cyclonox, optimal manufacturing condition, cyclohexanone peroxide synthesis, cyclohexanone peroxide dibutylphthalate mixture

ABSTRACT: The peroxides of cyclohexanone dissociate at higher, or in the presence of metals with varying valence also at room temperature, with formation of free radicals. They could thus be used as initiators for low-temperature polymerization in the manufacture of plastic material, paints and varnishes. The commercially available products are discussed. These are synthesized from cyclohexanone and hydrogen peroxide; however, no systematic study of the basic factors which influence the process has been done so far. The authors present data on the synthesis of the title product, available under the tradename Cyclonox (12.35% active oxygen).

Card 1/2

L 12959-65

ACCESSION NR: AP4042253

Various percentages of mineral acids, the amount of peroxide required, etc. were studied and results tabulated. Optimal conditions for the synthesis of the title product were found as follows: a 1:1 ratio of cyclohexanone to 30% aqueous hydrogen peroxide, 0.6 g equ./liter HNO_3 concentration, 20-30 C temperature; water required for diluting the reaction mixture: 2 volumes per 1 volume starter cyclohexanone; water for washing the final product: 10 volumes per 1 volume hexanone; duration of reaction 1 hour. The authors also recommend thorough mixing and drying at 30-35 C with dry air. The yield under these conditions will reach 90-92%. A sketch of the equipment used for obtaining the commercially offered 50% mixture of cyclohexanone peroxide with dibutylphthalate is presented. Orig. art. has: 7 formulas, 2 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: IC, CC

NO REF SOV: 002

OTHER: 012

Card 2/2

BELASHOV, G., kand. ekon. nauk; KOZIN, A.; LYASHENKO, P.; FILLIPPOV, G., dots.

"Economics, organization, and planning of grain milling" by D.N. Gavrichenkov. Reviewed by G. Belashov and others. Muk. elev. prom. 24 no.11:31-32 N '58. (MIRA 11:12)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti (for Belashov, Filippov). 2. Direktor Leningradskogo mel'nichnogo kombinata im. S.M. Kirova (for Kozin). 3. Nachal'nik Planovogo otdela Moskovskogo mel'nichnogo kombinata No.3 (for Lyashenko).
(Grain milling)
(Gavrichenkov, D.N.)

LYASHENKO, P.

Should we reconcile ourselves to it? Obshchestv. pit. no. 1:41
Ja '61. (MIRA 14:1)

1. Nachal'nik otdela obshchestvennogo pitaniya, g.Tuapse.
(Tuapse--Restaurants, lunchrooms, etc.)

LYASHENKO, S.

New construction sites on the "Pobeda" Collective Farm. Sel',
stroitel. 13 no. 7:5- J1 '58. (MIRA 11:8)

1. Starshiy inzhener Dnepropetrovskogo oblastnogo upravleniya po
stroitel'stvu v kolkhozakh.
(Pokrovskoye District--Farm buildings)

LYASHENKO, S.

Six-row dairy barns built of reinforced concrete construction elements. Sil'. bud. 9 no.9:18-19 S '59. (MIRA 12:12)

1. Starshiy inzhener upravleniya stroitel'stva Dnepropetrovskogo oblastnogo upravleniya sel'skogo khozyaystva.
(Dnepropetrovsk Province--Dairy barns)
(Precast concrete construction)

BUYANOV, Viktor Ivanovich; VOLOVIK, S.S.; GONCHAROV, G.I.; LYASHENKO,
S.N.; SIDLYARENKO, V.V.; PESTRYAKOV, A.I., redaktor; FEDO-
TOVA, A.F., tekhnicheskiiy redaktor.

[Mechanization of hemp growing] Mekhanizatsiia konoplevodstva.
Moskva, Gos.izd-vo sel'khoz.lit-ry, 1956. 290 p. (MLRA 10:6)
(Hemp) (Agricultural machinery)

LYASHENKO, S. N., CAND Agr Sci, "SUBSTANTIATION OF
THE TECHNOLOGY OF HEMP HARVESTING AND ^aTYPE OF HEMP-
HARVESTING MACHINE." SHOSTKA, 1960. (MIN OF Agr UKSSR,
UKRAINIAN ACAD OF Agr Sci). (KL, 3-61, 226).

TIMONIN, M.A., kand. tekhn. nauk; SEMCHENKO, G.I., kand. sel'-khoz. nauk; ARINSHEYN, A. I., kand. sel'khoz. nauk; GORSHKOV, P.A., doktor sel'khoz. nauk; ZHUKOV, M.S., kand. sel'khoz. nauk; DEMKIN, A.P., kand. sel'khoz. nauk; KRASHENINNIKOV, N.A., kand. sel'khoz. nauk; GORODNIY, N.G., doktor sel'khoz.nauk; REPYAKH, I.I., nauchn. sotr.; PIL'NIK, V.I., kand. sel'khoz.nauk; KHANIN, M.D., kand. sel'khoz. nauk; TSELIK, V.Z., st. nauchn. sotr.[deceased]; KOZINETS, N.I., nauchn. sotr.; ZHALNINA, L.S., nauchn. sotr.; IYASHENKO, S.N., kand. sel'khoz. nauk; GONCHAROV, G.I., inzh.; BUYANOV, V.I., inzh.; RUDNIKOV, V.N., st. nauchn. sotr.; BLOKHINA, V.V., red.; PROKOF'YEVA, A.N., tekhn.red.; SOKOLOVA, N.N., tekhn.red.

[Hemp] Konoplia. Moskva, Sel'khozizdat, 1963. 462 p.
(MIRA 16:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lubyanykh kul'tur (for all except Blokhina, Prokof'yeva, Sokolova).
(Hemp)

80558

S/051/60/008/06/019/024
E201/E691

24.7700
24.7600

AUTHORS: Miloslavskiy, V.K. and Lyashenko, S.P.

TITLE: Optical and Electrical Properties of Thin Layers of Tin Dioxide

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 6, pp 868-874 (USSR)

ABSTRACT: The paper reports an investigation of the temperature dependences of the Hall constant (Fig 1) and the electrical conductivity (Fig 2) of thin Sb-doped layers of SnO_2 in a wide range of temperatures (200-300°C), of the wavelength dependence of the transmission coefficient between 0.35 and 2.5 μ (Fig 3) and of the optical reflectivity between 1.5 and 6 μ (Fig 4). The samples were prepared by deposition of SnCl_4 with a small amount of SbCl_3 on glass plates which were then heated. Introduction of antimony was found to increase the electrical conductivity and the carrier density (up to 10^{21} cm^{-3}) of SnO_2 layers. The samples used had carrier densities $N = 2 \times 10^{19} - 10^{21} \text{ cm}^{-3}$ (cf. the table on p 870). The optical density per unit thickness of the sample (at $\lambda = 2.5 \mu$) was found to be directly proportional to the electron density N deduced from the Hall e.m.f. (Fig 5). This indicates that absorption in the near infrared region is due to conduction electrons. The authors calculated also the

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S/051/60/008/06/019/024
E201/E691

Optical and Electrical Properties of Thin Layers of Tin Dioxide

optical constants n and k in the absorption-edge region ($1.7-2.5 \mu$) from the experimental values of the reflectivity and the transmission coefficient and known thicknesses of the samples. A simple relationship between the real part of complex permittivity, ϵ , and the optical constants given by

$$\epsilon = n^2 - k^2 = \epsilon_0 - \frac{4\pi N e^2}{m^* \omega^2} \quad (3)$$

(where e is the electron charge and m^* is the effective carrier mass) was used by the authors to find ϵ . The linear decrease of ϵ with the square of wavelength is shown in Fig 7. Acknowledgments are made to I.N. Shklyarevskiy and N.A. Vlasenko for their advice. There are 7 figures, 1 table and 10 references, of which 5 are Soviet, 1 English, 2 German, 1 Japanese and 1 translation from English into Russian.

SUBMITTED: November 9, 1959

Card 2/2

LYASHENKO, S.P.; MILOSLAVSKIY, V.K.

Determining the effective mass in tin dioxide from the optical constants in the infrared region. Fiz. tver. tela 6 no.8:2560-2562 Ag '64. (MIRA 17:11)

1. Khar'kovskiy gosudarstvennyy universitet imeni Gor'kogo.

L 21812-65 EWT(1)/EWT(m)/EPA(w)-2/EEC(t)/EWP(t)/EEC(b)-2/EWP(b) Pub-10
ESD(gs)/IJP(c) JD S/0185/64/009/012/1291/1299

ACCESSION NR: AP5001549

AUTHOR: Lyashenko, S. P.; Myloslavs'kyy, V. K. (Míloslavskiy, V. K.)

TITLE: Optical properties of free electrons in tin dioxide

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 9, no. 12, 1964,
1291-1299

TOPIC TAGS: free electron, free electron property, optical constant,
free electron concentration, electron mobility, effective mass, ef-
fective carrier mass

ABSTRACT: The variation of optical constants for wavelengths from
0.4 to 9 μ on polycrystalline layers of SnO₂ at various concentrations
of free electrons N has been investigated. N was varied by introdu-
cing a controlled amount of Sb atoms into SnO₂. It was shown that
the variation of the optical constants conforms to the theory of free
electrons derived for isotropic semiconductors. The effective mass
of carriers in polycrystalline specimens was determined from compari-
sons of optical measurements and measurements of Hall constants. At

Card 1/2

L 21812-65

ACCESSION NR: AP5001549

$N > 10^{20} \text{ cm}^{-3}$, the effective mass ($m^* = 0.3m_0$) changes very little with concentration. At $N < 10^{20} \text{ cm}^{-3}$, m^* decreases rapidly with the decrease of N . This decrease results from the influence of the additional absorption in the infrared range on the variation of the real part of the dielectric constant ϵ associated with the impurity centers and the optical oscillations of lattice. The contribution to ϵ due to lattice oscillations is small at $N > 4 \times 10^{19} \text{ cm}^{-3}$. At $N > 10^{20} \text{ cm}^{-3}$, the contribution due to quantum transitions between the impurity zone and the conductivity zone is insignificant because of the merging of the two zones. The values obtained for m^* and ν (relaxation frequency) were used to calculate the mobility of the electrons. At $N > 10^{20} \text{ cm}^{-3}$ the mobility was close to the theoretical calculated by the Conwell-Weisskopf formula. A sharp decrease in mobility at $N < 10^{20} \text{ cm}^{-3}$ and a deviation from the theory may be due to the predominance of conductivity in the impurity zone at $N < 10^{20} \text{ cm}^{-3}$. Orig. art. has: 5 figures, 3 formulas, and 1 table.

ASSOCIATION: Kharkivs'kyi derzhuniversytet im. O. M. Gor'kogo (Khark'ov State University)

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ACCESSION NR: AP4011498

S/0051/64/016/001/0151/0153

AUTHOR: Lyashenko, S.P.; Miloslavskiy, V.K.

TITLE: A simple method for determining the thickness and optical constants of semiconductor and dielectric layers

SOURCE: Optika i spektroskopiya, v.16, no.1, 1964, 151-153

TOPIC TAGS: optical constant, index of refraction, absorption coefficient, transmittance, layer thickness, dielectric layer, dielectric coating, semiconductor layer, semiconductor coating

ABSTRACT: A method is proposed for determining the thickness and the optical constants (the index of refraction n and the absorption coefficient k) of semiconductor and dielectric layers. Whereas conventional procedures are based on either simultaneous measurement of the reflection coefficient R at normal incidence, the transmittance T and independent measurement of the thickness or on comparison of the transmittance (or reflection) for two different thicknesses, the present method is based on measurement of the transmittance T in a wide spectral range. The method can be used in all cases when there is an extensive region wherein n is much greater than k . Formulas are adduced for evaluating n , k and the thickness from the suc-

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ACC.NR: AP4011498

cessive maximum and minimum values of T. By way of illustration the optical constants are computed for an SnO_2 layer on the basis of an experimental T versus λ curve. It is noted that although the accuracy of the proposed method for determining the thickness and optical constants is not as high as that of the conventional interferometric method, it is adequate in many cases. Orig.art.has: 9 formulas, 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 24Mar63

SUB CODE: PH

DATE ACQ: 14Feb64

NR REF SOV: 003

ENCL: 00

OTHER: 001

Card 2/2

ACCESSION/NR: AP4043403

S/0181/64/006/008/2560/2562

AUTHORS: Lyashenko, S. P.; Miloslavskiy, V. K.

TITLE: Determination of effective mass in tin dioxide from the optical constants in the infrared region

SOURCE: Fizika tverdogo tela, v. 6; no. 8, 1964, 2560-2562

TOPIC TAGS: tin oxide optical constant, ir optical absorption, refractive index, dielectric constant, relaxation oscillation, Hall constant

ABSTRACT: In view of the discrepancies on the values of the effective mass of the electrons in SnO_2 obtained by different workers, the present authors calculate the effective mass in polycrystalline layers of tin dioxide in the electron density range from 5×10^{17} to $5 \times 10^{20} \text{ cm}^{-3}$. The electron density in the layers was regulated by introducing small amounts of antimony into the layers [2]. The ef-

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ACCESSION NR: AP4043403

fective mass was determined by comparing the optical constants n and k obtained by polarization measurements of reflected light from non-transparent samples in the infrared region, with measurements of the Hall constant of the same samples. The measurements were made in the wavelength range from 1 to 9 microns. The optical constants are determined essentially from the dependence of the dielectric constant on the quantity $(\omega^2 + \nu^2)^{-1}$ (ω -- frequency of incident radiation, ν -- relaxation frequency). The Hall constant is determined by averaging over the principal values of the reciprocal effective mass tensor. The results show that the effective mass increases with increasing electron density and some of the factors that cause this behavior are analyzed. The most reliable values of the effective mass are obtained for an electron density larger than 10^{20} cm^{-3} , for at lower values it is difficult to account for the various factors. Orig. art. has: 2 figures.

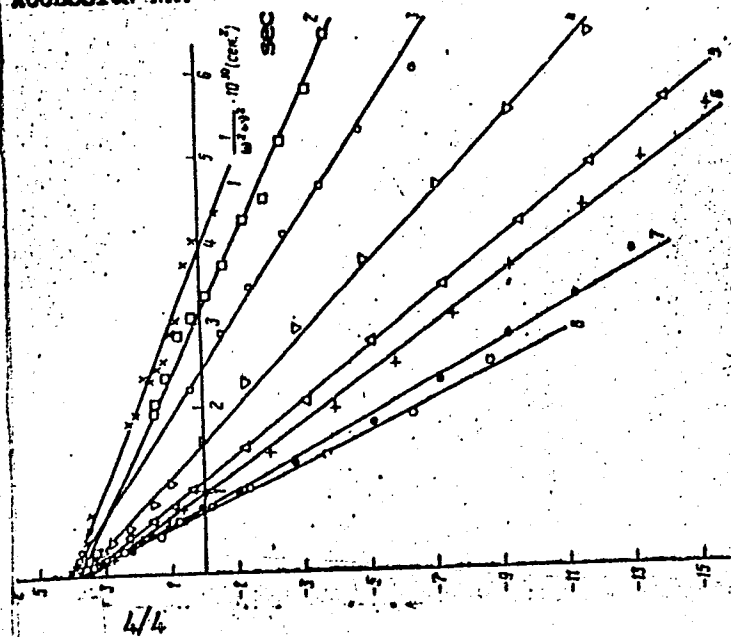
ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M.

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ACCESSION NR: AP4043403

ENCLOSURE: 01



Dependence of ϵ on $\frac{1}{\omega^2 + \nu^2}$

$N(\text{cm}^{-1})$: 1 - 4.4 · 10⁴, 2 - 5.75 · 10⁴, 3 - 1.23 · 10⁵, 4 - 2.26 · 10⁵, 5 - 2.70 · 10⁵, 6 - 2.72 · 10⁵, 7 - 4.63 · 10⁵, 8 - 5.32 · 10⁵

Card